CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 92-027
NPDES NO. CA0029866

WASTE DISCHARGE REQUIREMENTS FOR:

LORENTZ BARREL AND DRUM SHALLOW GROUND-WATER TASK FORCE
LORENTZ BARREL AND DRUM FEDERAL SUPERFUND SITE
1515 SOUTH 10TH STREET
SAN JOSE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. The Lorentz Barrel and Drum (LB&D) Shallow Ground-Water Task Force, hereinafter called the discharger, by application dated August 27, 1991, has applied for issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger is a sub-group of potentially responsible parties at the LB&D Superfund Site. The discharger has entered into an agreement with EPA to perform remediation of the shallow groundwater at LB&D as specified in the Record of Decision signed by EPA in September 1988.

3. LB&D is located at 1515 South 10th Street, on the southwest corner of the intersection of East Alma Avenue and South 10th Street in the southern portion of the City of San Jose (Figure 1). LB&D began recycling empty drums at the site in 1947. These empty drums were believed to have contained residual amounts of aqueous wastes, organic solvents, acids, oxidizers, and oils. LB&D also received empty polyethylene carboys containing caustic residues. Any residues were drained from the drums, and the drums were cleaned and recycled. From the 1950's until some time between 1967 and 1978, a drainage ditch existed north of the processing structure. This drainage ditch probably contained residues drained from the drums. The ditch drained into an unlined sump on the northeastern corner of the site. This sump is believed to be the main source of off-site groundwater pollution from the site.

4. Because of the waste management practices at LB&D, a variety of chemical contaminants have been detected in the soil including volatile organic chemicals (VOCs) and semi-volatile organic compounds, polychlorinated biphenyls (PCBs), pesticides and metals. However, the contaminants of concern in the shallow aquifer are VOCs because they are present in significant concentrations and have been detected with the greatest frequency in the shallow groundwater. The other groups of contaminants which include semivolatile organics,

pesticides, PCBs and metals have been detected less frequently in the groundwater than the VOCs and at levels that are, generally, below the action levels specified in EPA's 1988 Record of Decision for the site. In particular, PCB's and pesticides were detected only once in a 1986 sampling round. Subsequent groundwater samples collected during the remedial investigation and treatment system design have not detected any PCBs or organochloride pesticides. However, because PCBs have been detected in recent soil samples, this Order requires the dischargers to sample the effluent for PCBs. Additionally, this Order requires the dischargers to sample the effluent for semivolatiles because semivolatiles were detected in the groundwater at low levels during the remedial investigation.

Based on the Third Quarter 1991 Monitoring Report for LB&D, prepared by URS Consultants, the plume (as shown in Figure 2) extends northward off-site, is approximately 650 feet wide by 2000 feet long, and extends to a depth of at least 45 feet below ground surface.

5. The discharger seeks to minimize the further migration of VOCs and contain the majority of the affected groundwater by installing a groundwater extraction and treatment system. This system will consist of 19 extraction wells that will pump a combined total initial-rate of approximately 24,000 gallons per day (gpd). Extraction flow rates are expected to decrease to a steady state of approximately 7000 gpd after about two years. The extracted groundwater will be treated using ultraviolet light, hydrogen peroxide and granular activated carbon. The treated groundwater will be discharged to an Alma Street storm drain tributary to Coyote Creek and South San Francisco Bay.

6. The Board adopted a revised Water Quality Control Plan (Basin Plan) on December 11, 1991. The Basin Plan contains water quality objectives for Coyote Creek and South San Francisco Bay.

7. The existing and potential beneficial uses of Coyote Creek and South San Francisco Bay include:

- Contact and non-contact water recreation
- Wildlife habitat
- Preservation of rare and endangered species
- Fresh water habitat
- Fish spawning and migration
- Industrial service supply
- Navigation
- Ocean commercial and sport fishing
- Shellfishing
- Estuarine habitat

8. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses (1) at any point in San Francisco Bay south of the Dumbarton Bridge and (2) at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead-end slough, similar confined water, or any immediate tributary thereof."

9. Exceptions to the prohibitions referred to in Finding 8 are allowed by the Basin Plan and are warranted for this discharge because: (1) the discharger has performed a water reclamation study and determined that reclamation, reuse, or discharge to the POTW is not a viable option, as described in Finding 10, (2) the discharger has provided certification of the adequacy and reliability of treatment facilities and a plan that describes procedures for proper operation and maintenance of all treatment facilities, as described in Finding 11, and (3) because receiving water concentrations are expected to be below levels that would affect beneficial uses. Should studies indicate acute or chronic effects not currently anticipated, the Board will review the requirements of this Order based upon Limitation B.1.e.

10. Based upon the criteria in Board Resolution No. 88-160 and on information submitted by the discharger, the Board finds that treated extracted groundwater reclamation, re-use, or discharge to a POTW from the LB&D site is not feasible at this time.

    Regarding reclamation (i.e., reinfiltration) - The discharger estimated that to reinfiltrate a flow of 10 gallons per minute, a reinfiltration trench 350 feet long would be needed at a cost of approximately $300,000. The Board finds that this estimate may be overly conservative. Furthermore, a Board staff letter dated March 6, 1991 stated that "groundwater reinfiltration should be strongly considered at this site. The water table has dropped over 1½ feet in the last two years due to the drought. If the drought continues, then a further decline in water levels will likely slow remediation. Reinfiltrating the treated groundwater could increase the available drawdown [and speed remediation]".

    Thus the Board finds that, at a minimum, the discharger should further review the potential for reinfiltration before this permit is considered for reissuance in 1997.

    Regarding reuse - LB&D is currently vacant and no potential "non-contact" water users within the immediate vicinity of LB&D were located.

    Regarding discharge to a POTW - Discharge of treated extracted groundwater is prohibited by Section 15.12.200 of

the City of San Jose Municipal Code. The Code states that "no person shall discharge into the sanitary sewer...groundwater".

11. The discharger has submitted a satisfactory Operations and Maintenance Manual for the treatment system dated January 1992. In addition, the treatment system, by having granular activated carbon after ultraviolet light and hydrogen peroxide treatment, allows for redundancy that is anticipated to be adequate for the discharge.

12. Available data from the Santa Clara Valley indicate that concentrations of metals in treated groundwater often exceed shallow water effluent limitations. In many cases, the presence of metals in groundwater is due to natural factors related to soil and water chemistry, rather than contamination.

    This discharge is not expected to exceed the shallow water effluent limitations contained in Limitation A.1. However, with the knowledge that some discharges may exceed shallow water effluent limitations for metals (as specified by the Basin Plan amended December 1991), the Board will be preparing by January 1993 a strategy for modifying effluent limitations in NPDES permits for the discharge of treated groundwater (see Finding 13). This strategy may include requiring the discharger to determine the level of naturally occurring metals in the groundwater in the vicinity of the site.

13. The State Water Resources Control Board's Inland Surface Waters and Enclosed Bays and Estuaries Plans allow for short-term variances from Basin Plan provisions, if necessary, for discharges resulting from control measures to protect drinking water supplies and where natural background concentrations are typically greater than shallow water effluent limits. The variances may take the form of alternate effluent limitations.

14. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's ground water extraction and treatment systems and associated operation, maintenance, and monitoring plans constitute an acceptable control program for minimizing the discharge of toxicants to waters of the State.

15. Effluent limitations of this Order are based on the Clean Water Act, Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, and best engineering and geologic judgement. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

16. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

17. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

18. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. EFFLUENT LIMITATIONS

1. The effluent, at the discharge point to the storm drain, shall not contain constituents in excess of the limits contained in Table 1:

TABLE 1 - EFFLUENT LIMITATIONS

Constituent	Instantaneous Maximum Limit (ppb)	Basis for Limitation
Organics		
benzene	5	BAT
chloroform	5	BAT
1,1-dichloroethane	5	BAT
1,2-dichloroethane	5	BAT
1,1-dichloroethene	5	BAT
cis-1,2-dichloroethane	5	BAT
trans-1,2-dichloroethane	5	BAT
1,2-dichloropropane	5	BAT
tetrachloroethene	5	BAT
1,1,1-trichloroethane	5	BAT
trichloroethene	5	BAT
vinyl chloride	5	BAT
Any other volatile organic compound (as identified by EPA Method 601 or 624)	5	BAT
Inorganics		
arsenic	190	BP
cadmium	1.1	BP
chromium VI	11	BP
copper	11.8	BP
cyanide	5.2	BP
lead	3.2	BP
mercury	2.4	BP
nickel	160	BP
selenium	5	BP
silver	4	BP
zinc	110	BP
Others		
pH	within range of 6.5 to 8.5	BP
Toxicity to Fish	90% median and 90 percentile value of 70% min.	BP

ppb=parts per billion
BAT=Best available treatment economically available
BP=Basin Plan (as amended December 11, 1991,Table IV-1A)

Cd, Cu, Pb, Ni, Ag, and Zn limits calculated at hardness =100mg/l

2. The flow of the discharge shall not exceed 100,000 gallons per day.

3. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

4. In any representative set of samples, the discharges shall meet the following limit of quality:

   Toxicity: The survival of test fishes in 96-hour static bioassays of the undiluted effluent as discharged shall be a three sample moving median of 90% survival, and a 90 percentile value of not less than 70% survival in a single sample. Static renewal bioassays shall be performed according to protocols approved by the U.S. EPA or the State Water Resources Control Board or published by the American Society for Testing and Materials or American Public Health Association. Two fish species will be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of three, using two of the following three test fish species in parallel tests: rainbow trout, fathead minnow, or three-spine stickleback.

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

   a. floating, suspended, or deposited macroscopic particulate matter or foam;

   b. bottom deposits or aquatic growths;

   c. alteration of temperature or apparent color beyond present natural background levels;

   d. visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

   b. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

   c. Un-ionized ammonia (as N):

      0.025 mg/l annual mean
      0.4 mg/l maximum

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. PROVISIONS

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board and upon starting any discharge.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall notify the Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. Any discharge to a location other than the discharge point(s) specified in this Order will require a modification to this Order or submission of a second NPDES application.

5. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986 and modified January 1987, except items A.10, B.2, B.3, C.8 and C.11.

6. This Order expires on March 18, 1997. The discharger must file a report of waste discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

7. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 18, 1992.

STEVEN R. RITCHIE
Executive Officer

Attachments: Figure 1 - Location Map
Figure 2 - Site Map
Self-Monitoring Program
Statement of Basis

PART B

LORENTZ BARREL AND DRUM SHALLOW GROUND-WATER TASK FORCE
LORENTZ BARREL AND DRUM FEDERAL SUPERFUND SITE
1515 SOUTH 10TH STREET
SAN JOSE, SANTA CLARA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
I-1	At a point in the groundwater collection system immediately prior to treatment.

B. EFFLUENT

Station	Description
E-1	At a point immediately following treatment and prior to discharge to the storm drain.

C. RECEIVING WATERS

Station	Description
C-1	At a point in Coyote Creek at least 100 feet but no more than 200 feet downstream from the storm drain discharge point of E-1 into Coyote Creek.
C-2	At a point in Coyote Creek at least 100 feet but no more than 200 feet upstream from the storm drain discharge point of E-1 into Coyote Creek.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is provided in the attached Table A.

III. MODIFICATIONS TO PART A, DATED DECEMBER 1986 AND MODIFIED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. All chromatographic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified for all effluent samples. If previously unquantified peaks greater than 5 ppb are identified in any effluent sample, then these peaks shall be confirmed based on analyses using chemical standards necessary to achieve proper identification and quantification. Results shall also be submitted for any additional analyses performed by the discharger at the specific request of the Board for parameters for which effluent limits have been established and provided to the discharger by the Board."

B. Deletions from Part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1, E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., and G.4.f.

C. Modifications to Part A: For the following, the discharger shall comply with the Sections as changed and reported herein:

1. Section D.2.a. is changed to read:

"Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan."

2. Section D.2.d. is changed to read:

"If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly, annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board's Executive Officer, on a case by case basis."

3. Section D.2.e. is changed to read:

"If any instantaneous maximum limit is exceeded, within 24 hours of receiving the analytical results indicating the violation, a confirmation sample shall be taken and analyzed with 24 hour turn-

around time. If the instantaneous maximum is violated in the second sample, the discharger shall notify Regional Board staff immediately. The Executive Officer may order the discharge to be terminated, on a case-by-case basis."

4. In Section F.1, the phrase "(at the waste treatment plant)" is changed to read, "(at the location of the extraction and treatment system)."

5. Quarterly written reports required in Section G.4 shall be filed quarterly by the thirtieth day of the following month.

6. Section G.4.e is changed to read:

"Summary tabulations of the data shall include, for each constituent, total number of analyses, maximum, minimum, and average values for each period. Total flow data shall also be included. This information shall be prepared in a format similar to EPA Form 3320-1. These Quarterly Self-Monitoring Reports should be submitted on January 31, April 30, July 31, and October 31 of each year beginning with the July 31, 1992 Report. This information shall be submitted only to the Board:

Executive Officer
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

7. The Annual Report required in Section G.5. shall be submitted by January 31 of each year in place of the quarterly report due on the same day.

IV. MISCELLANEOUS REPORTING

The discharger's proposed treatment system includes the use of hydrogen peroxide, acids, and bases. If any additional chemicals or additives are proposed to be used in the operation and/or maintenance of the ground water extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 92-027.

2. Was adopted by the Board on March 18, 1992.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or the Board.

STEVEN R. RITCHIE
Executive Officer

Attachments: Table A
Figure 1 - Location Map
Figure 2 - Site Map

TABLE A
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

LORENTZ BARREL AND DRUM SHALLOW GROUND-WATER TASK FORCE
LORENTZ BARREL AND DRUM FEDERAL SUPERFUND SITE
1515 SOUTH 10TH STREET
SAN JOSE, SANTA CLARA COUNTY

Sampling Station	I-1	E-1	C-1 & C-2
TYPE OF SAMPLE	G	G	G
Flow Rate (gpd)	cont	cont	-
Bioassay 96-hr % survival	-	Q/Y	-
Electrical Conductivity (umhos/cm)	M/B	M/B	-
Sulfate (ppm)	M/Q	M/Q	-
Ammonia Nitrogen (mg/l & kg/day)	-	V	-
Turbidity (NTU's)	-	Q	-
pH (units)	M/Q	M/Q	Q
Dissolved Oxygen (mg/l and % saturation)	-	Q	Q
Temperature (°C)	M/Q	M/Q	Q
Standard Observations	-	-	Q
Arsenic (ppb)	-	Q/Y	-
Cadmium (ppb)	-	Q/Y	-
Chromium (hexavalent) (ppb)	-	Q/Y	-
Copper (ppb)	-	Q/Y	-
Lead (ppb)	-	Q/Y	-
Mercury (ppb)	-	Q/Y	-
Nickel (ppb)	-	Q/Y	-
Selenium (ppb)	-	Q/Y	-
Silver (ppb)	-	Q/Y	-
Zinc (ppb)	-	Q/Y	-
EPA Method 624	M/B	M/B	Y
EPA Method 625	Q/Y	Q/Y	Y
EPA Method 608	Q/Y	Q/Y	Y

LEGEND FOR TABLE A

TYPES OF SAMPLES

G = grab sample
C-24 = 24 hr. composite
Cont. = continuous sampling
DI = depth integrated sample
BS = bottom sediment sample
O = observation
- = none required

TYPES OF STATIONS

I = intake or influent stations
E = effluent sampling stations
D = discharge point sampling stations
C = receiving water sample stations
L = basin and/or pond levee stations
B = bottom sediment station
G = groundwater station

FREQUENCY OF SAMPLING

H = once each hour
D = once each day
W = once each week
M = once each month

Y = once each year in June

V = varies; total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival

2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in September
Q = quarterly, once in March, June, September, and December

W/M = weekly for first three months after startup of operations and reduced to monthly thereafter

W/Y = weekly for first three months after startup of operations and reduced to annually thereafter

M/Y = monthly for first 12 months after startup of operations and reduced to annually thereafter

2D = every 2 days
2W =every 2 weeks
3M = every 3 months
Cont = continuous

Q/Y = quarterly for first year after startup of operations and reduced to annually thereafter

W/Q = weekly for first three months after startup of operations and reduced to quarterly thereafter

M/B = monthly for first 12 months after startup of operations and reduced to every two months thereafter

M/Q = monthly for first three months after startup and reduced to quarterly thereafter

Note: For sampling station E-1, samples are not required to be analyzed by EPA Methods 625 and 608 if the results from station I-1 are below the Method Detection Limit.

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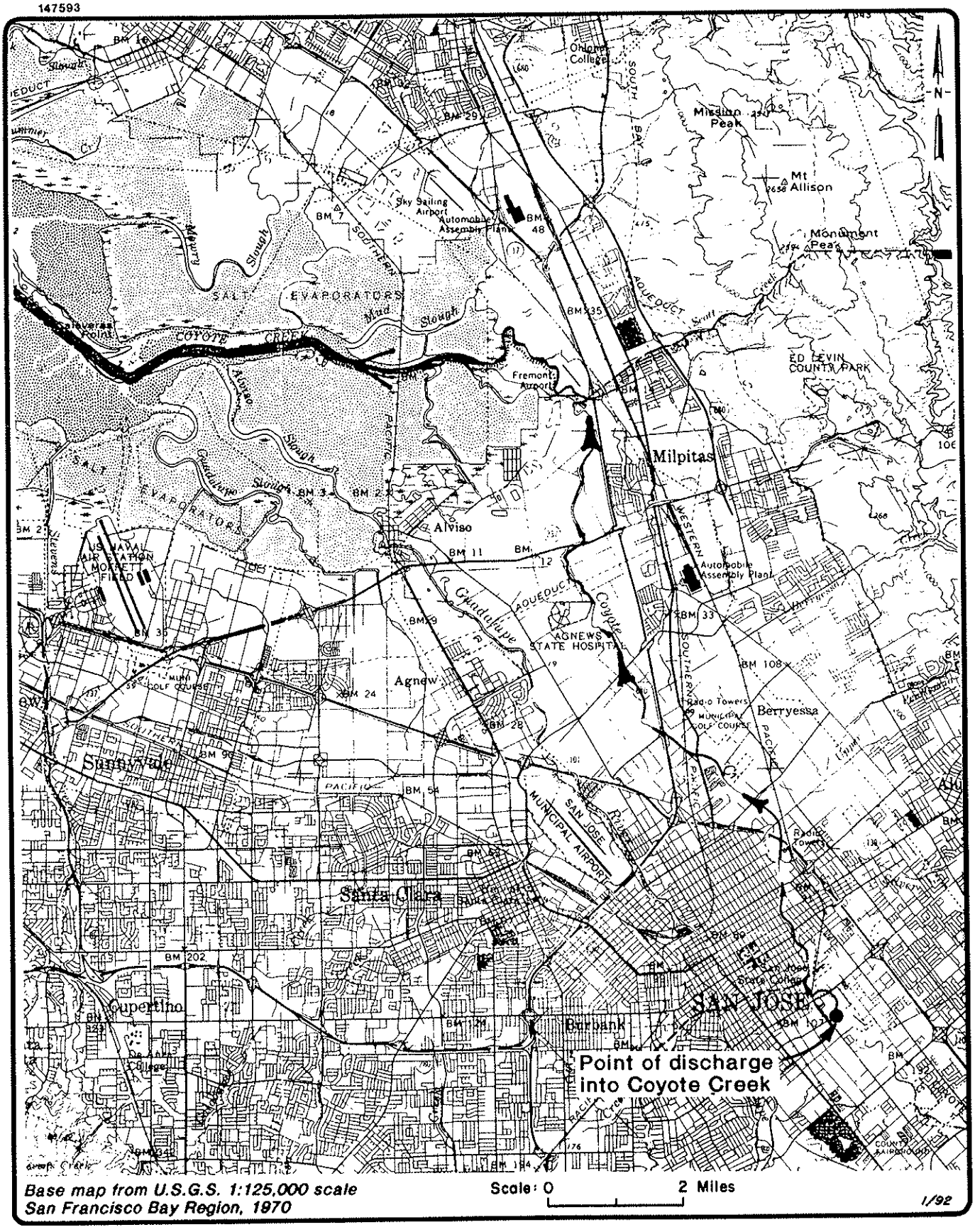

Figure 1. Lorentz Barrel and Drum Location Map

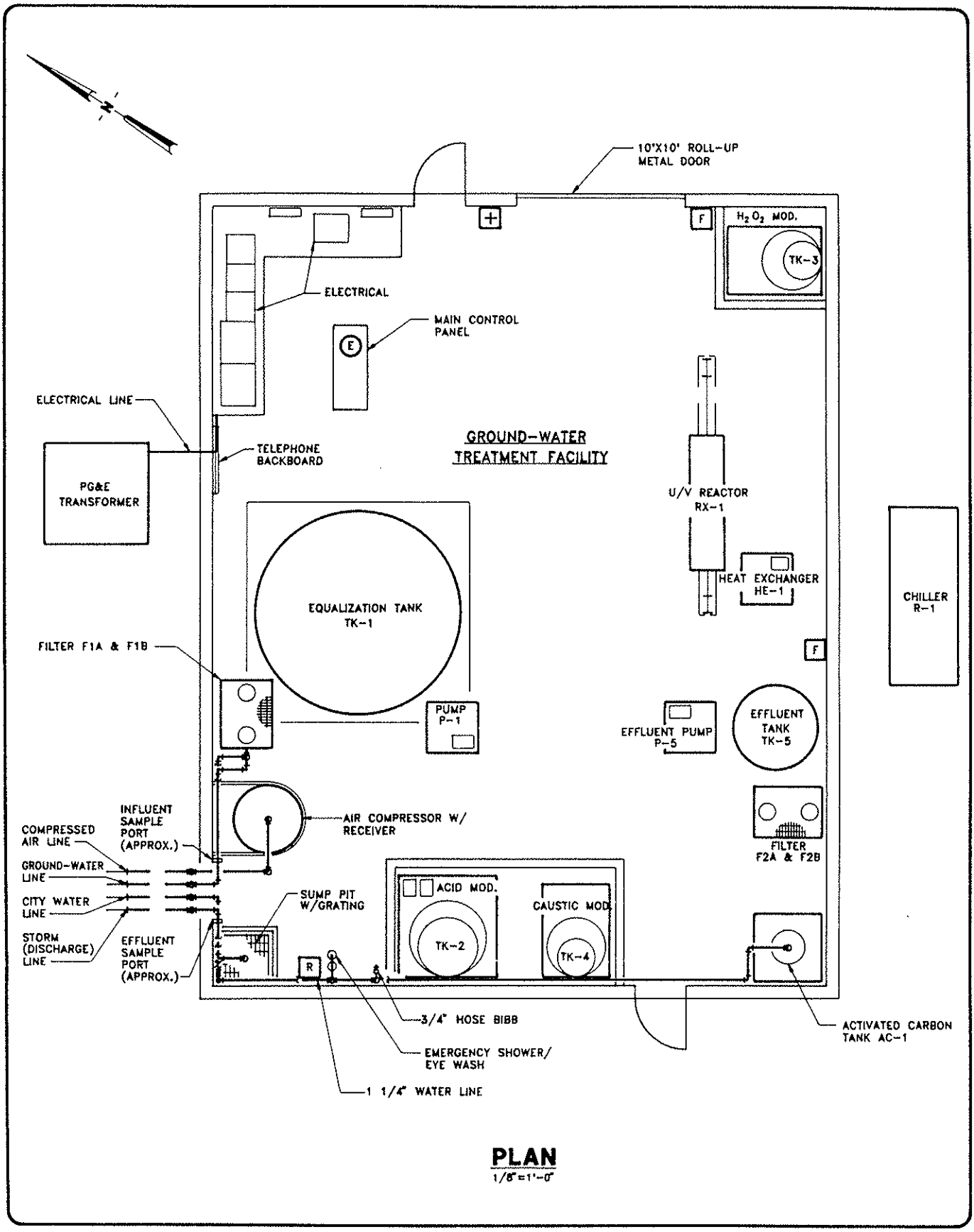

Figure 2. Lorentz Barrel and Drum Site Map

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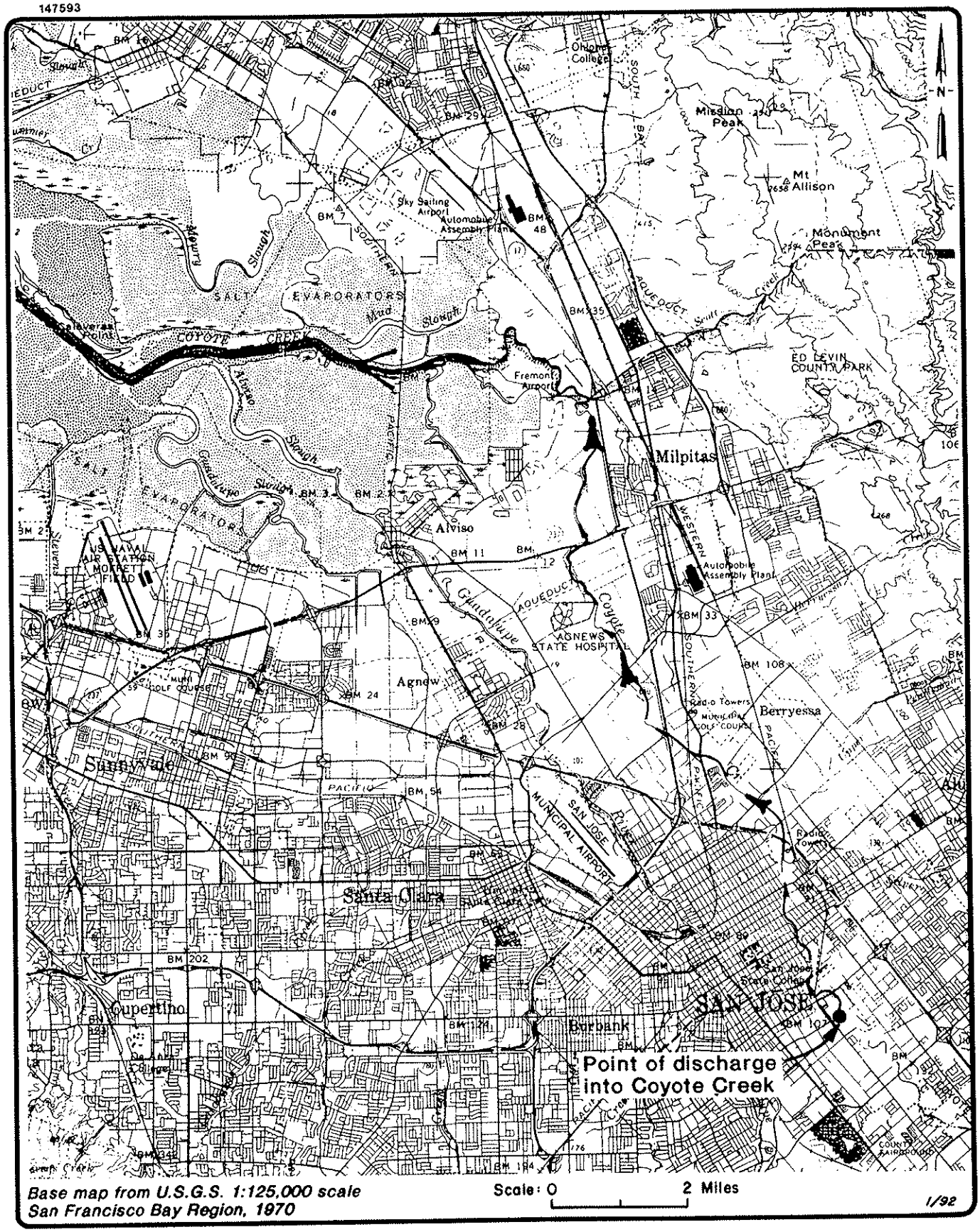

Figure 1. Lorentz Barrel and Drum Location Map

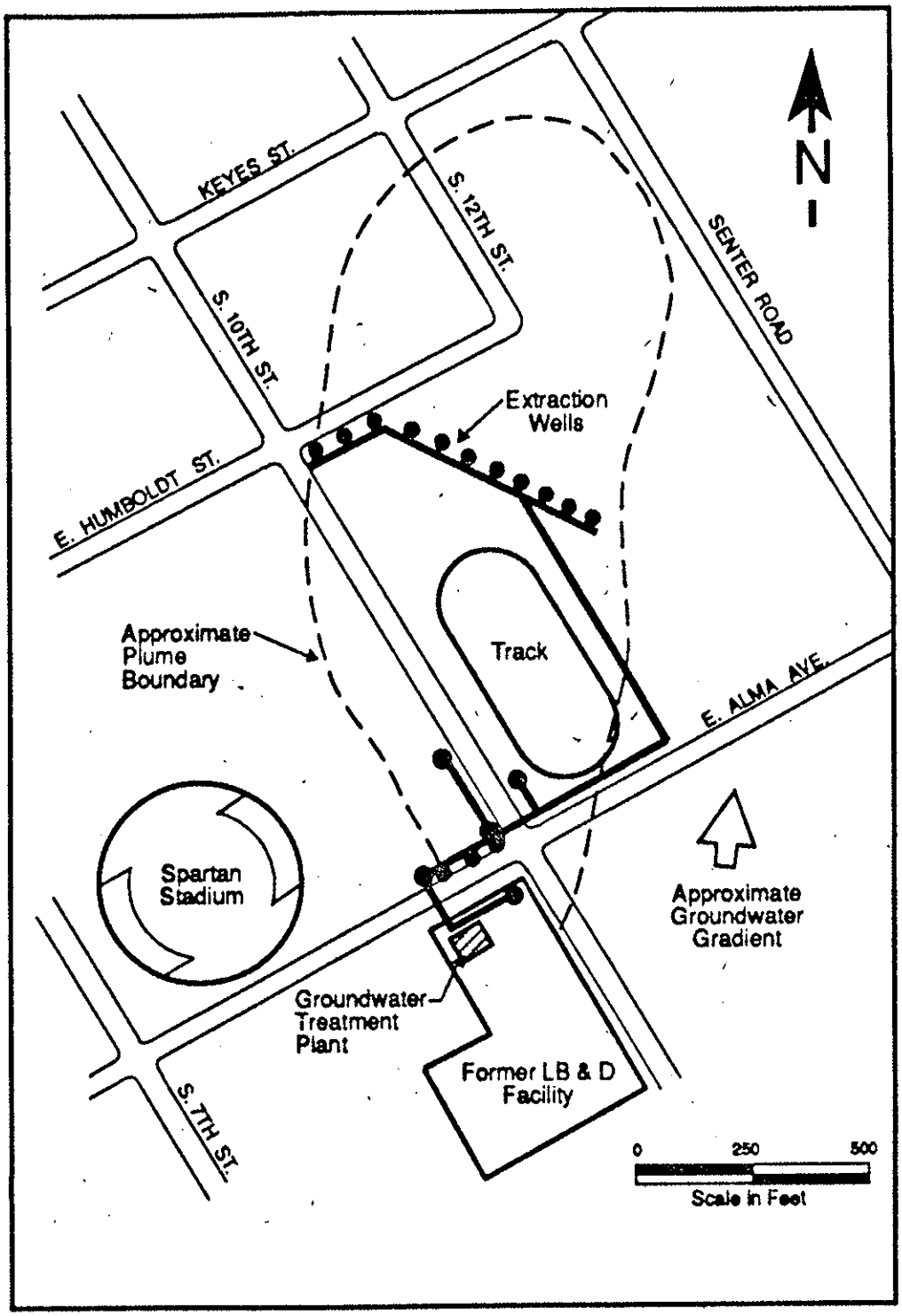

Figure 2. Lorentz Barrel and Drum Site Map

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

LORENTZ BARREL AND DRUM SHALLOW GROUND-WATER TASK FORCE
LORENTZ BARREL AND DRUM FEDERAL SUPERFUND SITE
1515 SOUTH 10TH STREET
SAN JOSE, SANTA CLARA COUNTY

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CONSISTS OF:

PART A Dated December 1986 and modified January 1987

PART B Adopted March 18, 1992